

Written Testimony of Colonel Charles J. Fiala, Jr.
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Committee on Resources
Subcommittee on National Parks, Recreation, and Public Lands,

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Mr. Chairman and members of the subcommittee, thank you for inviting me to testify before you today. I am Colonel Charles J. Fiala, Jr., the Commander and District Engineer of the Baltimore District, United States Army Corps of Engineers.

You invited me here today to provide information regarding the legally permitted discharges of the Washington Aqueduct, which is a division within the Baltimore District. I would like to provide a brief background of the significant role the Washington Aqueduct plays in support of our nation's capital and the surrounding areas and then respond to the issues raised in your invitation.

At the direction of Congress in 1853, the United States Army Corps of Engineers began construction of the water delivery system that is today known and operated as the Washington Aqueduct. The United States Army Corps of Engineers has continuously supplied water for drinking, fire protection, and a host of other purposes to the City of Washington and the District of Columbia since 1859. Many of the original structures from the 1850s are still in operation and many others date back to the 1920s. Consequently, many of the real estate interests acquired to support the Aqueduct's mission and the treatment processes currently used by the Aqueduct were acquired and functioning decades before the C & O Canal National Historic Park became a national park.

Today, we own and operate wholesale water production facilities that provide all of the water supplied to Washington, D.C., Arlington County, Virginia, and the City of Falls Church, Virginia, an area home to numerous agencies which support the administration and defense of this country including the very building we are meeting in today. By way of example, the Washington Aqueduct supplied the water used to fight the fires at the Pentagon on September 11, as it would for any fire in any one of these three jurisdictions. Providing high quality, safe, and affordable water to the approximately one million consumers in these areas, particularly in light of the September 11 attack on this country, is one of my highest priorities.

The Washington Aqueduct's manager works under my general supervision. The Washington Aqueduct is a unique federal institution. While much of the federal government is totally or largely dependent upon congressional appropriations, the Washington Aqueduct operates as a business. It receives the

funds it needs to operate by way of the fees it charges its three local government customers for the water it supplies. Capital improvements are also funded by the customers. At the same time, like all of the other drinking water production facilities, the Washington Aqueduct is regulated by the terms of the Safe Drinking Water Act and the Clean Water Act. The Washington Aqueduct takes its compliance responsibilities seriously. It operates in accordance with the National Pollutant Discharge Elimination System (NPDES) permits issued to it by both the State of Maryland and by Region 3 of the Environmental Protection Agency (EPA).

To respond to the issues you raise, let me clearly state that all water treated by the Washington Aqueduct comes from the Potomac River and that approximately 95% of the sediments the Washington Aqueduct discharges back into the Potomac River is Potomac River sediment. Treatment is a three-step process that includes sedimentation, filtration, and disinfection. The large volume of sediment that is naturally transported by the Potomac River and drawn into the treatment process must be removed. In the case of the Washington Aqueduct, sediment removal begins in an initial settlement basin, then occurs more actively in six large basins with the aid of a coagulant. The coagulant currently used by the Washington Aqueduct is aluminum sulfate. This is typical of the water industry.

Periodically, these six sedimentation basins must be cleaned of the sediment build up. When that occurs, the contents, which include raw water, i.e. river water, the accumulated sediments, and the accumulated coagulant, are flushed to the Potomac River in accordance with the terms of the NPDES permit issued by EPA Region 3. Approximately 95 percent of the sediments discharged are naturally occurring sediment transported by the river before the water was drawn into the treatment process. We estimate that about five percent of the solids of any discharge are attributable to the coagulant. At the last stage of the basin cleaning, some finished water (i.e. drinking water) is used in fire hoses to flush out the last of the sediments. That drinking water does contain chlorine, but the physical action of the water on the walls and bottom of the basin volatilizes some of that chlorine. The remaining chlorine content of the drinking water used for this purpose reacts with the sediment effectively using up all free chlorine potential.

To put the discharges into perspective, the current permit allows discharge only when the flow of the Potomac exceeds 3.5 billion gallons per day. Normally a discharge event from one of the sedimentation basins will be completed in a 24 hour period. From the most often drained basins, the volume of the discharge would be in the range of 12 to 18 million gallons, which as a maximum is about

one percent of the flow of the river during that 24-hour period. The volume of solids discharged to the Potomac River from the six sedimentation basins is only about one half of the total volume of solids that were removed from the water taken from the River. That other half remains in the initial sedimentation basin which acts as a pre-sedimentation basin before the raw water is dosed with a coagulant in the formal treatment process.

With respect to the C&O Canal National Historic Park, the Washington Aqueduct, in accordance with EPA and State of Maryland permits, conducts two types of discharges. They are the just-described routine sedimentation basin discharges that occur approximately 16 to 20 times a year and infrequent discharges of raw or partially treated water to allow for maintenance of Washington Aqueduct infrastructure.

The routine water treatment solids, i.e., sediment, discharges use three conduits to get those solids to the Potomac River. One of those conduits is a closed pipe that runs underground through the Park's property and discharges into the Potomac River approximately 12 to 16 times per year. A typical discharge lasts 12 hours. These discharges are in accordance with the EPA NPDES permit. At the point of discharge, the sediment enters the Potomac River below water level from a concrete structure slightly offshore. No sediment is deposited within the C&O Canal National Historic Park at that location.

The other two conduits discharge onto Park property approximately 75' from the shore of the Potomac River and follow a channel into the River. These discharges are also in accordance with the EPA NPDES permit and occur approximately 4 to 6 times per year for approximately 12 to 18 hours. The closed discharge pipes at those locations run underground from the sedimentation basins and end in a headwall about 50 to 75 feet from the river. A small channel a few inches deep at each location extends from the headwall, traveling perpendicular to the river, and transports the liquid and the solids until they enter the River and are mixed and carried downstream. During a discharge the sediment is confined to that channel and does not otherwise affect the surrounding land. There is no build up of residue from the sediment discharges on Park land.

With respect to the non-routine discharges to accomplish plant maintenance, the State of Maryland, under a Maryland General Discharge Permit, allows the Washington Aqueduct to discharge raw water into streams and on lands which cross Park property. These discharges are infrequent, approximately once a year.

In only one location where infrequent discharge occurs is there the potential for chlorinated water to leave the Washington Aqueduct treatment plant and enter the waters of the State of Maryland. This may occur approximately 5 to 6 times per year for a few hours at a time. In that instance a dechlorination station is used to properly dechlorinate the water before it leaves the treatment plant.

EPA has also issued Washington Aqueduct an NPDES Permit (DC0000329) that allows discharge of raw water dosed with coagulant should maintenance be required on a major conduit. The path of this discharge is open and crosses Park property. Discharges of this nature occur infrequently, approximately once every two years, for approximately six hours. There are two other points allowed under this permit. One is to drain ground water from under sedimentation basins. That water goes directly to the Potomac River. The other is to drain water from another large conduit to Rock Creek. That discharge might occur only once in 10 years and would be clear unchlorinated water.

All of our discharge points or outfalls are properly regulated by and comply with NPDES permits. Where other private or public properties are crossed, proper land usage rights have been obtained.

At this time, there are no known adverse effects on C & O Canal National Historic Park property as a result of these discharges.

The next issue associated with the Washington Aqueduct's sediment discharges that the committee has asked me to discuss is the impact of the discharges, if any, upon the shortnose sturgeon. That particular question is the subject of current litigation brought by the National Wilderness Institute against a number of the federal agencies testifying here today. My testimony is therefore somewhat constrained so as not to compromise the Government's ability to present a sound defense in this litigation. In accordance with the Endangered Species Act, consultation among the federal agencies regarding the shortnose sturgeon is ongoing at this time.

At the request and direction of the Environmental Protection Agency, the United States Army Corps of Engineers contracted for two significant scientific efforts to study the impacts, if any, of the sediment discharges upon the aquatic life of the Potomac River. The first effort was a study completed by the Dynamac Corporation in 1993. This report concluded that there were no apparent water quality effects from the release of the discharges. The second effort, based upon a study plan coordinated with the United States Fish and Wildlife Service and

approved by EPA Region 3, was a study conducted by EA Engineering, Science, and Technology, Inc., which has just been completed. Washington Aqueduct provided the report for that study to EPA Region 3 on October 5. This report is based upon accepted scientific procedure and analysis. Based upon the results of the study and other information available to EPA, it appears to us at the Corps that the sediments have a negligible effect upon the Potomac River. The executive summary from the report is attached as an exhibit to my testimony. EPA is in the process of determining whether to reissue the Washington Aqueduct's current NPDES permit for the sediment discharges, and, if so, under what conditions.

In conclusion, the United States Army Corps of Engineers continues to work closely with the EPA and all of our other federal agency partners to do what is best both for the environment, and to ensure the availability and safety of the drinking water we supply to this region.

Again I thank you for the opportunity to be here this morning to apprise the subcommittee of the operations of the Washington to Aqueduct and to respond to your questions.

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